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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/721,239	11/26/2003	I-Ru Liu	BHT-3111-380	6111

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EXAMINER

HAROON, ADEEL

ART UNIT	PAPER NUMBER
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2685

DATE MAILED: 03/15/2006

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 10/721,239	Applicant(s) LIU, I-RU	
	Examiner Adeel Haroon	Art Unit 2685	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-16 is/are pending in the application.
4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-16 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. ____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____. |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date ____. | 6) <input type="checkbox"/> Other: ____. |

DETAILED ACTION

Claim Rejections - 35 USC § 102

1. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

2. Claims 1, 2, 11-13, 15, and 16 are rejected under 35 U.S.C. 102(b) as being anticipated by Fujita (U.S. 5,974,083).

With respect to claim 1, Fujita discloses a system for RF gain control with a receiver for receiving a RF signal in figure 4. Fujita discloses a signal-sampling device, element number 22, for retrieving a signal strength information from the RF signal (Column 1, lines 23-24). Fujita also discloses a noise-sampling device, element number 23, for retrieving noise information from the RF signal (Column 1, lines 25-29). Fujita further discloses an operation unit, element numbers 24 and 25, for generating a feedback control signal according to the signal strength and noise information, wherein the operation unit provides the feedback control signal to element number 19 in the receiver to adjust a gain value thereof (Column 1, lines 30-43).

With respect to claim 2, Fujita discloses that the operation unit couples the signal strength and noise informations to generate the feedback control signal (Column 1, lines 30-43).

With respect to claim 11, Fujita further discloses a second processor, element number 24, for generating a signal quality information according to the signal strength and noise informations (Column 1, lines 30-43).

With respect to claim 12, Fujita further discloses the signal quality information is signal-to-noise ratio (Column 1, lines 38-42).

With respect to claim 13, Fujita discloses a method for gain control with receiving a RF signal and retrieving a signal strength information from the RF signal (Column 1, lines 23-24). Fujita also discloses retrieving a noise information from the RF signal (Column 1, lines 25-29). Fujita further discloses adjusting a gain value according to the signal strength and noise informations (Column 1, lines 30-43).

With respect to claim 15, Fujita further discloses generating a signal quality information according to the signal strength and noise informations (Column 1, lines 30-43).

With respect to claim 16, Fujita further discloses the signal quality information is signal-to-noise ratio (Column 1, lines 38-42).

Claim Rejections - 35 USC § 103

3. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

4. Claims 3-10 and 14 are rejected under 35 U.S.C. 103(a) as being unpatentable over Fujita in view of Kim et al. (U.S. 2003/0072397).

With respect to claim 3, the system of Fujita is described above in the discussion of claim 1. Fujita does not expressly disclose a detector for detecting a time interval between frames and a processor for controlling gain control system with frame information. However, Kim et al. disclose a RF gain control system in figure 6 thus making it analogous art since it is in the same field of endeavor. Kim et al. teach a detector, element number 62, for detecting a time interval between two contiguous frames in the RF signal and for generating detection information (Paragraph 42). Kim et al. also teach a processor, element number 62, coupled to the detector and a gain control detector that operates the gain control detector upon the information provided by the detector (Paragraph 43). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to apply the frame detecting and controlling technique of Kim et al. to the noise-sampling device of Fujita's system in

order to only operate the sampling device when a frame is detected thus conserving power.

With respect to claim 4, Kim et al. teach that the frame is an OFDM frame which can be interpreted as any of request to send frame, clear to send frame, acknowledgement frame, data frame, beacon frame, poll frame, data plus poll frame, data plus acknowledgement frame, and data plus acknowledgement plus poll frame.

With respect to claim 5, Kim et al. teach detecting time in between frames, which is interpreted a short inter-frame space.

With respect to claim 6, Kim et al. teach that instruction is triggers the gain control operation, which is a gate operation.

With respect to claims 7 and 8, Kim et al. teach that when the receiver is in a state of not receiving data, the first processor inhibits/suspends the gain control operation (Paragraph 43). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to apply the frame detecting and controlling technique of Kim et al. to the noise-sampling device of Fujita's system in order to only operate the sampling device when a frame is detected thus conserving power.

With respect to claims 9 and 10, Fujita does not disclose a transmitter being coupled to the receiver. However, Kim et al. discloses a transmitter being coupled to the gain control receiver (Paragraph 32). Kim et al. teach that when the receiver is in a state of not receiving data, when the transmitter is in a state of transmitting data, the first processor inhibits/suspends the gain control operation (Paragraph 43). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's

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invention to apply the frame detecting and controlling technique of Kim et al. to the noise-sampling device of Fujita's system in order to only operate the sampling device when a frame is detected thus conserving power.

With respect to claim 3, the method of Fujita is described above in the discussion of claim 13. Fujita does not expressly disclose that the noise information is retrieved from a short inter-frame space in the RF signal. However, Kim et al. disclose a RF gain control system in figure 6 thus making it analogous art since it is in the same field of endeavor. Kim et al. teach for detecting a time interval between frames, short inner-frame space, in the RF signal and for generating detection information (Paragraph 42). Kim et al. also teach a processor, element number 62, coupled to the detector and a gain control detector that operates the gain control detector upon the information provided by the detector (Paragraph 43). Therefore, it would be obvious to one of ordinary skill in the art at the time of the applicant's invention to apply the frame detecting and controlling technique of Kim et al. to the noise-sampling device of Fujita's method in order to only operate the sampling device when a frame is detected thus conserving power.

Conclusion

5. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure. Wheatley, III (U.S. 5,732,341), Shi (U.S. 6,873,832), and Yang (U.S. 2004/0242177) all disclose various RF gain control systems.

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Any inquiry concerning this communication or earlier communications from the examiner should be directed to Adeel Haroon whose telephone number is (571) 272-7405. The examiner can normally be reached on Monday thru Friday, 8:30 a.m. - 5:00 p.m..

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Nay Maung can be reached on (571) 272-7882. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

AH
3/2/06

Nguyen Vo
3/31/2006

NGUYEN T. VO
PRIMARY EXAMINER